



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/811,440	03/20/2001	Shinichi Akahane	501.39836X00	9526
24956	7590	04/27/2005	EXAMINER	
MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.			HO, CHUONG T	
1800 DIAGONAL ROAD			ART UNIT	
SUITE 370			PAPER NUMBER	
ALEXANDRIA, VA 22314			2664	

DATE MAILED: 04/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/811,440

Applicant(s)

AKAHANE ET AL.

Examiner

CHUONG T HO

Art Unit

2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-6 is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3</u> . | 6) <input type="checkbox"/> Other: _____ |

1. The amendment filed 12/21/04 have been entered and made of record.
1. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.
2. Claims 1-6 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al. (U.S. Patent No. 6,633,571)

In the claim 1, see figure 1, Sakamoto et al. discloses a router (interwork router 10) connected to a core network, a first local area network (LAN) (LAN 1) belonging to a first virtual private network (VPN), a second LAN (LAN 2) belonging to a second VPN, third LAN (LAN a) belonging to a third VPN and a fourth LAN (LAN b) belonging to a fourth VPN, comprising:

See figure 1, 3, a first interface for accommodating a first line connected to the first LAN (LAN 1) and the second LAN (LAN 2), the IP packets from the first and the second LANS being encapsulated by a first protocol (ATM) (see col. 5, lines 10-20, lines 65-67, col. 6, lines 1-3, lines 13-17, lines 59-62, lines 66-67, col. 8, lines 55-65);

See figure 1, a second interface for accommodating a second line connected to the third LAN and a third line connected to the fourth LAN, and for receiving IP packets from the

Art Unit: 2664

third LAN via the second line and IP packets from the fourth LAN via the third line, the IP packets from the third and the fourth LAN being encapsulated by a second protocol (IP capsule) different the first protocol (see col. 5, lines 10-20, lines 65-67, col. 6, lines 1-3, lines 13-17, lines 59-62, lines 66-67, col. 8, lines 55-65);

For identifying which of the first VPN and the second VPN to which an IP packet received at the first interface belonging by header information of the first protocol (ATM encapsulation); and

For identifying which of the third VPN and forth VPN to which an IP packet received at a the second interface belonging by physical interface numbers assigned to interface between the second interface and the second line and interface and interface between the second interface and the third line (see figure 1, col. 5, lines 10-20, lines 65-67, col. 6, lines 1-3, lines 13-17, lines 59-62, lines 66-67, col. 8, lines 55-65).

However, Sakamoto et al. is silent to disclosing receiving multiplexed IP packets (see figure 1, col. 3, lines 28-30) from the first and the second LAN.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to receive the multiplexing IP packets from the first and the second LAN in order to finds one of the VPNs to which one the LANs belongs across which the packet passed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2664

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hurren et al. (U.S. Patent No. 6,788,681 B1) in view of Luciani et al. (U.S. Patent No. 6,614,791 B1).

In the claim 1, see figure 2A, (see col. 6, lines 63-67) (see col. 5, lines 20-35, lines 58-67), Hurren et al. discloses a first local area network (16) (22C) belonging to a first virtual private network (VPN), a second LAN (12) (22C) belonging to a second VPN, a third LAN (14) (22B) belonging to a third VPN and a fourth LAN (12) (22A) belonging to a fourth VPN, comprising:

- a first interface for accommodating a first line connected to the first LAN and the second LAN, and for receiving IP packets from the first and the second LAN via the first line (see figure 2A) (see col. 5, lines 20-35, lines 58-67) (see col. 6, lines 1-3);
- a second interface for accommodating a second line connected to the third LAN and a third line connected to the fourth LAN, and for receiving IP packets from the third LAN via the second line and the IP packets from the fourth LAN via the third line, the IP packets from the third and the fourth LANs being encapsulated (see figure 2A) (see col. 5, lines 20-35, lines 58-67) (see col. 6, lines 1-3);

However, Hurren is silent disclosing receiving multiplexed IP packets from the first and the second LAN via the first line, the IP packets from the first and the second LAN being encapsulated by a first protocol.

Luciani (U.S. Patent No. 6,614,791 B1) discloses a first interface for accommodating a first line connected to the first LAN and the second LAN, and for receiving multiplexed IP packets from the first and the second LAN via the first line, the IP packets from the first and the second LAN being encapsulated by a first protocol (see col. 2, lines 45-50, lines 56-60, col. 6, lines 47-50, lines 54-56, col. 7, lines 45-53, lines 57-60, col. 8, lines 36-49, lines 55-60, col. 9, lines 1-10, col. 10, lines 5-20); comprising:

- For identifying which of the first VPN and the second VPN to which an IP packet received at the first interface belongs by header information of the first protocol (see col. 2, lines 45-50, lines 56-60, col. 6, lines 47-50, lines 54-56, col. 7, lines 45-53, lines 57-60, col. 8, lines 36-49, lines 55-60, col. 9, lines 1-10, col. 10, lines 5-20);
- For identifying which of the third VPN and the fourth VPN to which an IP packet received at the second interface belongs by physical interface numbers assigned to interface between the second interface and the second line and interface between the second interface and the third line (see col. 2, lines 45-50, lines 56-60, col. 6, lines 47-50, lines 54-56, col. 7, lines 45-53, lines 57-60, col. 8, lines 36-49, lines 55-60, col. 9, lines 1-10, col. 10, lines 5-20);

Both Hurren and Luciani (6,614,791 B1) discloses VPN router. Luciani recognizes a first line connected to the first LAN and the second LAN, and for receiving multiplexed IP packets from the first and the second LAN via the first line, the IP packets from the first and the second LAN being encapsulated by a first protocol. Thus,

it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hurren with the teaching of Luciani to multiplex IP packets from the first and the second LAN via the first line, the IP packets from the first and the second LANs being encapsulated by a first protocol in order to support a number different protocols that enable the communication devices (router) to communicate over a data communication network.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Hurren – Luciani) in view of Yamato, Shigeki (EP 0952755 A2).

Regarding to claims 2, 3, the combined system (Hurren-Luciani) discloses the limitations of claim 1 above.

However, the combined system (Hurren-Luciani) is silent to disclosing a first routing table for the first VPN, the first routing table mapping each IP addresses used in the first VPN to each of capsule headers used in the core network; a second routing table for the second VPN, the second routing table mapping each IP addresses used in the second VPN to each of capsule headers used in the core network; a third routing table for the third VPN, the third routing table mapping each IP addresses used in the third VPN to each of capsule headers used in the core network; a fourth routing table for

the fourth VPN, the fourth routing table mapping each IP addresses used in the fourth VPN to each of capsule headers used in the core network; a processing unit for adding an capsule header used in the core network to an IP packet belonging to the first VPN by referring the first routing table, adding an capsule header used in the core network to an IP packet belonging to the second VPN by referring the second routing table adding an capsule header used in the core network to an IP packet belonging to the third VPN by referring the third routing table and adding an capsule header used in the core network to an IP packet belonging to the forth VPN by referring the forth routing table.

Yamato, Shigeki (EP 0952755) discloses a first routing table for the first VPN, the first routing table mapping each IP addresses used in the first VPN to each of capsule headers used in the core network; a second routing table for the second VPN, the second routing table mapping each IP addresses used in the second VPN to each of capsule headers used in the core network; a third routing table for the third VPN, the third routing table mapping each IP addresses used in the third VPN to each of capsule headers used in the core network; a fourth routing table for the fourth VPN, the fourth routing table mapping each IP addresses used in the fourth VPN to each of capsule headers used in the core network; a processing unit for adding an capsule header used in the core network to an IP packet belonging to the first VPN by referring the first routing table, adding an capsule header used in the core network to an IP packet belonging to the second VPN by referring the second routing table adding an capsule header used in the core network to an IP packet belonging to the third VPN by referring the third routing table and adding an capsule header used in the core network to an IP

packet belonging to the forth VPN by referring the forth routing table (see col. 6, lines 53-55, col. 7, lines 27-28, lines 38-42, col. 8, lines 54-58).

Both Hurren, Luciani, and Yamato discloses the virtual private network. Yamato, Shigeki recognizes a first routing table for the first VPN, the first routing table mapping each IP addresses used in the first VPN to each of capsule headers used in the core network; a second routing table for the second VPN, the second routing table mapping each IP addresses used in the second VPN to each of capsule headers used in the core network; a third routing table for the third VPN, the third routing table mapping each IP addresses used in the third VPN to each of capsule headers used in the core network; a fourth routing table for the fourth VPN, the fourth routing table mapping each IP addresses used in the fourth VPN to each of capsule headers used in the core network; a processing unit for adding an capsule header used in the core network to an IP packet belonging to the first VPN by referring the first routing table, adding an capsule header used in the core network to an IP packet belonging to the second VPN by referring the second routing table adding an capsule header used in the core network to an IP packet belonging to the third VPN by referring the third routing table and adding an capsule header used in the core network to an IP packet belonging to the forth VPN by referring the forth routing table. Thus, it would have been obvious to one of skill in the art at the time of the invention to modify the combined system (Hurren-Luciani) with the teaching of Yamato to provide routing tables for each VPN in order to ensure quality of service guarantees in the VPN.

Regarding to claim 3, Hurren et al. discloses wherein the first protocol is an asynchronous transfer mode protocol and the header information is expressed in combined VPI and VCI values; and wherein the second protocol is a Point-to-point (PPP) over Synchronous Optical Network (SONET) (see col. 6, lines 65-67).

Allowable Subject Matter

6. Claims 4-6 are allowed.

The following is an examiner's statement of reasons for allowance: the prior art (6633571, 20040008706, 6636516, 6614791) of the record does not appear to teach or render obvious the claimed limitations in combination with the specific added limitations, as recited from independent claim 4: "registering header information of the first protocol as a VPN identifier for identifying which of the first VPN and the second VPN to which an IP packet received from the first line belongs to the memory; registering physical interface numbers assigned to interface between the router and the second line and interface between the router and the third line as a VPN identifier for identifying which of the third VPN and the forth VPN to which an IP packet received either the second line or the third line belongs" .

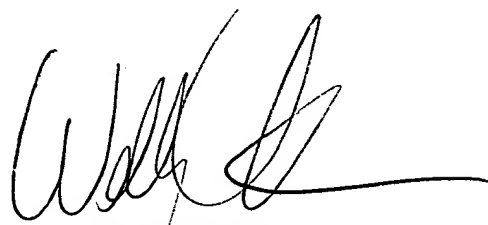
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHUONG T HO whose telephone number is (571) 272-3133. The examiner can normally be reached on 8:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on (571) 272-3134. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

04/20/05



WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER